



## 复旦大学数学科学学院 数学综合报告会

报告题目: **Variational and Quasi-Variational Solutions with Derivative Constraints**

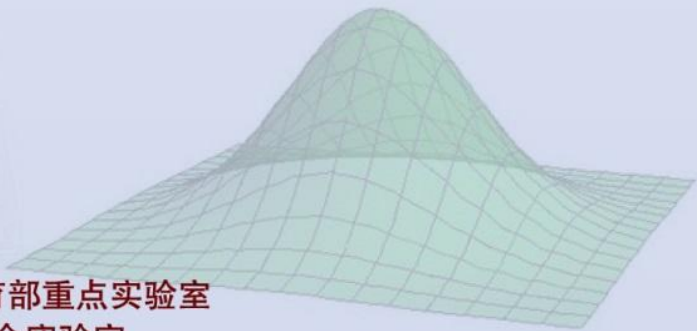
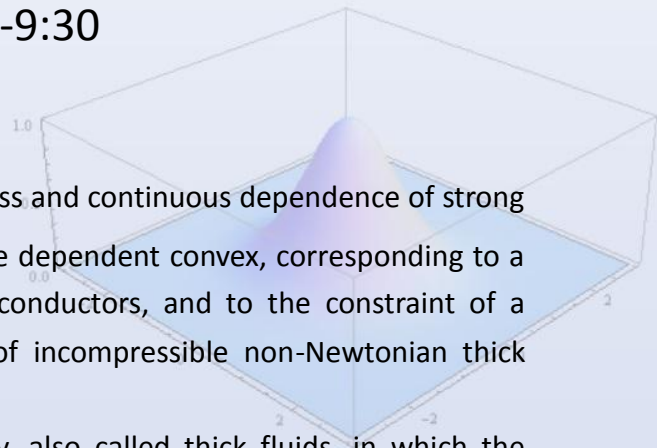
报告人: José Francisco Rodrigues

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报告时间: 2017-07-07 星期五 8:30-9:30

报告地点: 光华东主楼 2001

**摘要:** We discuss results on the existence, uniqueness and continuous dependence of strong solutions to a class of variational inequalities with a time dependent convex, corresponding to a curl threshold, for a Maxwell system for type-II superconductors, and to the constraint of a variable maximum admissible shear rate in a model of incompressible non-Newtonian thick flows. These fluids correspond to a limit case of shear-thickening viscosity, also called thick fluids, in which the solutions belong to a time dependent convex set with bounded deformation rate tensors. We also prove the existence of stationary solutions, which are the unique asymptotic limit of evolutionary flows in the case of sufficiently large viscosity. Similar results can be obtained for the nonlinear Maxwell system which is a limit case of a p-power type nonlinearity. For this model with an implicit constraint we show the existence of a quasi-variational solution by using a penalisation method.



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